MATERIALS SCIENCE & CENTER FOR NANOSCALE MATERIALS
COLLOQUIUM

SPEAKER: Professor Siu-Tat Chui
University of Delaware

TITLE: Nanomagnetism from Zero to Finite Frequency

DATE: Thursday, July 21, 2005

TIME: 11:00 a.m.

PLACE: Building 212, Room A157

HOST: Valentyn Novosad

Refreshments will be served at 10:45 a.m.

Abstract:
In this talk we discuss two current topics of research in anomagnetism at zero and finite frequencies: (a) Artificially nanostructured electromagnetic material (b) Physics of the switching of nanostructures.
(a) There is much current interest in materials with negative electric and magnetic susceptibilities, the so-called left-handed material. A perfect lens, which is connected with surface plasmon nano-optics, was proposed. The negative susceptibility usually comes from the anomalous dispersion of a resonance. Magnetic materials provides for a convenient way to control the magnetic susceptibility. In this talk, we provide a perspective of the background of this field and where it is going.
(b) Because of the long range nature of the dipolar interaction, the switching of the magnetization in a nano-structure is a rich and interesting physics question. Recent problems in consistently controlling the switching of MRAM (magnetic random access memory) with 100% confidence has added to the interest to this question. In this talk we explain the analytic and numerical background in this field. Recent problems in bit selectivity in MRAM's will be explained.